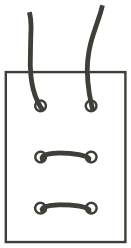
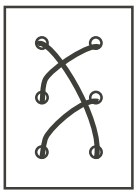
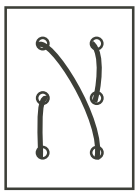
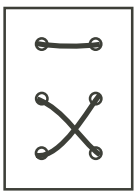
Problem

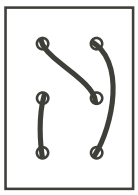
A single piece of string is laced through six holes in a piece of cardboard. The top side of the card is shown an the right. From the diagrams below, select the two that could NOT be the underside of the card. Explain your choices.

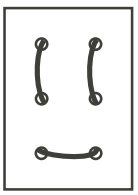


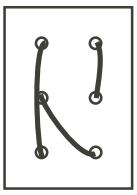
a) 

b) 

c) 

d) 

e) 

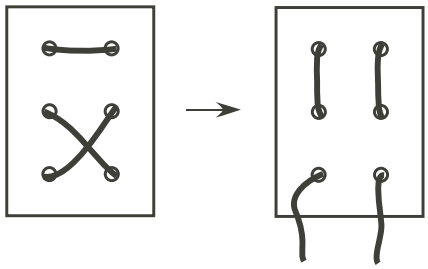
f) 

Hints

Suggestion: If students are having trouble visualizing, use the template on the following page, photocopied on cardstock, to make a set of cards with six holes punched in each. Then give them lengths of string to make each of views a) - f), so they can turn them over to seek solutions.

Solution

Cards c) and e) could not be the underside of the given card, since both would require 'vertical' segments of string on their top sides.

c) 

e)